Number Sense Exam 104, 2/21/2021

(1) $2468 \div 9$ has a remainder of _____

(2) $3\frac{1}{2} \times 5\frac{6}{7} =$ _____ (improper fraction)

(3) $36 + 72 + 24 + 58 =$ _____

(4) $2008 + 2009 =$ _____

(5) $34^2 =$ _____

(6) $743 - 347 =$ _____

(7) $\frac{4}{7} - \frac{7}{8} =$ _____ (proper fraction)

(8) $25 \times 20 - 15 + 10 \div 5 =$ _____

(9) $2014 \times 4 + 6 =$ _____

*(10) $374 - 1056 + 1916 =$ _____

(11) 16% of 20 = _____

(12) $32 - 16 \div 8 + 4 \times 2 =$ _____

(13) $44 \times 36 =$ _____

(14) 9 is what % of 180? _____ %

(15) $14443 \times 21 =$ _____

(16) $15 \times 38 =$ _____

(17) $(34 + 65 + 96) \div 3$ has a remainder of _____

(18) The product of the first 4 prime numbers is _____

(19) $1\frac{7}{9} \times 2\frac{1}{4} =$ _____

*(20) $85858 \div 585 =$ _____

(21) $3212015 \div 11$ has a remainder of _____

(22) $200_6 =$ _____ 10

(23) If 6 oz. of candy costs \$0.96, then one pound of candy costs _____

(24) $\{s, l, o, p, e\} \cap \{l, i, n, e\}$ has ___ distinct elements

(25) $131_5 =$ _____ 10

(26) If $A = 1$, $B = -A$, and $C = A - B$, then $ABC =$ _____

(27) If $\frac{3}{4} = \frac{3x}{5}$, then $x =$ _____

(28) $4^5 \div 11$ has a remainder of _____

(29) $6\frac{2}{3} \times 3\frac{1}{3} =$ _____ (mixed number)

*(30) $97531 \div 209 =$ _____

(31) $111 \times 345 =$ _____

(32) The smallest root of $2x^2 + 13x + 20 = 0$ is _____

(33) $5! \div 4! + 3! \div 2! - 1! =$ _____

(34) If Universal set $U = \{2, 3, 5, 7, 9, 11, 13, 17, 19\}$ and set $A = \{3, 7, 13, 17\}$, then A' contains how many distinct elements? _____

(35) The sum of the positive integral divisors of 108 is

(36) $21 \times \frac{23}{25} =$ _____ (mixed number)

(37) 12% of 200 is _____ % of 50

(38) $\frac{5}{11} - \frac{11}{21} =$ _____

(39) $63^2 + 24^2 =$ _____

*(40) $\sqrt{7152023} =$ _____

(41) $\frac{1}{4}(64^2 - 36^2) =$ _____

(42) $13 \times 15 + 1 =$ _____

(43) The sum of the roots of $f(x) = (2x - 5)^3(x - 5) =$ _____

(44) Find k if the product of the roots of $x^2 + 2x + k = 0$ is 8. $k =$ _____

(45) The positive geometric mean of 4 and 36 is _____

(46) If $4^{(x+2)} = 48$, then $4^x =$ _____

(47) If $x + y = \dfrac{1}{3}$ and $xy = 3$, then $x^3 + y^3 =$ _____

(48) If $14x + 5 = 23$, then $14x - 5 =$ _____

(49) $45_7 - 26_7 =$ _____ 7

*(50) $\sqrt{1062017} =$ _____

(51) If $\log_x 36 = 2$, then $x =$ _____

(52) $57 \times 57 =$ _____

(53) The odds of rolling a composite number on a single die is _____ (proper fraction)

(54) $12^2 \div 6^2 \times 3^2 =$ _____

(55) Let $|2 + 3x| \leq 4$. The greatest value of x is _____

(56) If A is 20 more than B and C is 10 less than A, then C is how much more than B? _____

(57) If $\dfrac{15 + 30\text{i}}{-5\text{i}} = a + b\text{i}$, then $a + b =$ _____

(58) If $\log_x 2744 = 3$, then $x =$ _____

(59) If $852k$ is divisible by 6 then the largest units digit value for k is _____

*(60) $8^3 \div 4^6 \times 2^{10} =$ _____

(61) 630° equals $k\pi$ radians. Find k. _____

(62) $\left[2\sin\left(\dfrac{\pi}{6}\right)\cos\left(\dfrac{\pi}{6}\right)\right] \times \left[\tan\left(\dfrac{\pi}{6}\right)\right] =$ _____

(63) The simplified sum of the coefficients of the expansion of $(4x + 3y)^3 =$ _____

(64) 3.25% of 24 is _____

(65) How many ways can 3 people be seated in a row of 5 chairs? _____

(66) The number of distinct diagonals of a 5 sided regular polygon is _____

(67) If $f(x) = x^2 + 3x - 1$, then $f[f^{-1}(4)] =$ _____

(68) The shortest distance between $(0, -2)$ and $5x + 12y = 11$ is _____

(69) $222_3 \times 2_3 =$ _____ 3

*(70) $142857 \times 21 =$ _____

(71) The 1st triangular number times the 2nd hexagonal number times the 3rd pentagonal number is _____

(72) If $\ln(50) = \ln(2) + k\ln(5)$, then $k =$ _____

(73) $6^8 \div 8$ has a remainder of _____

(74) If $N \div 8$ has a remainder of 5, then $3N \div 8$ has a remainder of _____

(75) $|3x - 1| = 17$. Find x if $x < 0$. _____

(76) The set $\{a, b, c\}$ has _____ 2-element subsets

(77) The remainder, in base 8, when 153 base 8 is divided by 7 is _____

(78) $\displaystyle\int_0^2 x^2\, dx =$ _____

(79) $1 + 2^2 + 3^3 + 4^4 =$ _____

*(80) $\sqrt[3]{1234567} =$ _____